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PATENT  
Attorney Docket No.: 19452A-000930US

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

Yanofsky *et al.*

Application No.: Not Yet Assigned

Filed: October 15, 2001

For: SELECTIVE CONTROL OF  
LIGNIN BIOSYNTHESIS IN  
TRANSGENIC PLANTS

Art Unit: Not Yet Assigned

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination of the above-referenced application, please enter the  
following amendments and remarks.

IN THE SPECIFICATION:

Please cancel the paragraph on page 1, lines 4-7 and insert in its place the  
following:

--CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a divisional application of and claims the benefit of  
U.S. Patent Application Serial No. 09/339,998, filed June 25, 1999, which claims the  
benefit of U.S. Provisional Patent Application Serial No. 60/090,649, filed June 25, 1998,  
each of which is incorporated herein by reference.--

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IN THE CLAIMS:

Please cancel claims 1-23, 40 and 48-64.

Please amend claims 25, 27, 36, 38, 42, and 44 as follows:

25. (Amended) The method of claim 24, wherein said AGL1/5-like gene product comprises a polypeptide sequence at least 50% identical to SEQ ID NO:4.

27. (Amended) The method of claim 24, wherein said AGL1/5-like gene product comprises a polypeptide sequence at least 50% identical to SEQ ID NO:6.

36. (Amended) The method of claim 30, wherein said AGL1/5-like gene product comprises a polypeptide sequence at least 50% identical to SEQ ID NO:4.

38. (Amended) The method of claim 30, wherein said AGL1/5-like gene product comprises a polypeptide sequence at least 50% identical to SEQ ID NO:6.

42. (Amended) The transgenic vascular plant of claim 41, wherein said AGL1/5-like gene product comprises a polypeptide sequence at least 50% identical to SEQ ID NO:4.

44. (Amended) The transgenic vascular plant of claim 41, wherein said AGL1/5-like gene product comprises a polypeptide sequence at least 50% identical to SEQ ID NO:6.

REMARKS

**1. Status of the claims**

With this Amendment, claims 1-23, 40 and 48-64 are canceled without prejudice to subsequent revival. Claims 25, 27, 36, 38, 42, and 44 are amended. Therefore, claims 24-39 and 41-47 are pending with entry of this Amendment.

A marked up copy of amended claims 25, 27, 36, 38, 42, and 44 are provided in Appendix A entitled **"VERSION WITH MARKINGS TO SHOW**

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**CHANGES MADE.”** As a convenience to the Examiner, a complete set of the claims, as amended herein, is also attached to this Amendment as Appendix B.

**2. *Support for the amendment to the specification***

Support for the amendments to the claims can be found throughout the specification, the drawings, and the claims as originally drafted. For example, support for amended claims 25, 27, 36, 38, 42, and 44 can be found, e.g., page 57, lines 7-21 of the specification. No new matter is added by this Amendment.

**CONCLUSION**

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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## APPENDIX A

## VERSION WITH MARKINGS TO SHOW CHANGES MADE

25. (Amended) The method of claim 24, wherein said AGL1/5-like gene product [has substantially the amino acid sequence of an AGL1 ortholog] comprises a polypeptide sequence at least 50% identical to SEQ ID NO:4.

27. (Amended) The method of claim 24, wherein said AGL1/5-like gene product [has substantially the amino acid sequence of an AGL5 ortholog] comprises a polypeptide sequence at least 50% identical to SEQ ID NO:6.

36. (Amended) The method of claim 30, wherein said AGL1/5-like gene product [has substantially the amino acid sequence of an AGL1 ortholog] comprises a polypeptide sequence at least 50% identical to SEQ ID NO:4.

38. (Amended) The method of claim 30, wherein said AGL1/5-like gene product [has substantially the amino acid sequence of an AGL5 ortholog] comprises a polypeptide sequence at least 50% identical to SEQ ID NO:6.

42. (Amended) The transgenic vascular plant of claim 41, wherein said AGL1/5-like gene product [has substantially the amino acid sequence of an AGL1 ortholog] comprises a polypeptide sequence at least 50% identical to SEQ ID NO:4.

44. (Amended) The transgenic vascular plant of claim 41, wherein said AGL1/5-like gene product [has substantially the amino acid sequence of an AGL5 ortholog] comprises a polypeptide sequence at least 50% identical to SEQ ID NO:6.

**APPENDIX B**

**CLAIMS PENDING WITH ENTRY OF AMENDMENT**

24. A method of enhancing lignification in a vascular plant, comprising ectopically expressing a nucleic acid molecule encoding an AGL1/5-like gene product in said vascular plant, whereby lignification is enhanced due to ectopic expression of said nucleic acid molecule.

25. The method of claim 24, wherein said AGL1/5-like gene product comprises a polypeptide sequence at least 50% identical to SEQ ID NO:4.

26. The method of claim 25, wherein said AGL1/5-like gene product has the amino acid sequence of Arabidopsis AGL1 (SEQ ID NO:4).

27. The method of claim 24, wherein said AGL1/5-like gene product comprises a polypeptide sequence at least 50% identical to SEQ ID NO:6.

28. The method of claim 27, wherein said AGL1/5-like gene product has the amino acid sequence of Arabidopsis AGL5 (SEQ ID NO: 6).

29. The method of claim 24, wherein said vascular plant is a woody plant.

30. The method of claim 24, comprising introducing an exogenous nucleic acid molecule encoding an AGL1/5-like gene product into said vascular plant to produce a transgenic vascular plant characterized by enhanced lignification.

31. The method of claim 30, wherein said exogenous nucleic acid molecule encoding an AGL1/5-like gene product is operatively linked to an exogenous regulatory element.

32. The method of claim 31, wherein said exogenous regulatory element is a constitutive regulatory element.

33. The method of claim 31, wherein said exogenous regulatory element is a tissue-selective regulatory element.

34. The method of claim 33, wherein said tissue-selective regulatory element is an AGL1 regulatory element or AGL5 regulatory element.

35. The method of claim 33, wherein said tissue-selective regulatory element is a lignified tissue-selective regulatory element selected from the group consisting of a fiber-selective regulatory element, xylem-selective regulatory element and a tracheid selective regulatory element.

36. The method of claim 30, wherein said AGL1/5-like gene product comprises a polypeptide sequence at least 50% identical to SEQ ID NO:4.

37. The method of claim 36, wherein said AGL1/5-like gene product has the amino acid sequence of Arabidopsis AGL1 (SEQ ID NO:4).

38. The method of claim 30, wherein said AGL1/5-like gene product comprises a polypeptide sequence at least 50% identical to SEQ ID NO:6.

39. The method of claim 38, wherein said AGL1/5-like gene product has the amino acid sequence of Arabidopsis AGL5 (SEQ ID NO:6).

41. A transgenic vascular plant characterized by enhanced lignification, comprising an ectopically expressed nucleic acid molecule comprising a lignified tissue-selective regulatory element operatively linked to a nucleic acid molecule encoding an AGL1/5-like gene product.

42. The transgenic vascular plant of claim 41, wherein said AGL1/5-like gene product comprises a polypeptide sequence at least 50% identical to SEQ ID NO:4.

43. The transgenic vascular plant of claim 42, wherein said AGL1/5-like gene product has the amino acid sequence of Arabidopsis AGL1 (SEQ ID NO:4).

44. The transgenic vascular plant of claim 41, wherein said AGL1/5-like gene product comprises a polypeptide sequence at least 50% identical to SEQ ID NO:6.

45. The transgenic vascular plant of claim 44, wherein said AGL1/5-like gene product has the amino acid sequence of Arabidopsis AGL5 (SEQ ID NO:6).

46. The transgenic vascular plant of claim 41, wherein said lignified tissue-selective regulatory element is selected from the group consisting of a fiber-selective regulatory element, xylem-selective regulatory element and a tracheid selective regulatory element.

47. A tissue derived from the transgenic vascular plant of claim 43, said transgenic vascular plant comprising an ectopically expressed nucleic acid molecule comprising a lignified tissue-selective regulatory element operatively linked to a nucleic acid molecule encoding an AGL1/5-like gene product.